APRIL/MAY 2025

23PECH24A — BIO INORGANIC CHEMISTRY

Shanmuga Industrial Arts & Science College T.V.Malai

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are siderophores? Mention their importance in biological process.
2. Give the structural features and functions of carboxy peptidase.
3. What is trigger mechanism for the cooperativity of the oxygenation of haemoglobin?
4. What is Cytochrome P-450? Mention the biological activity of it.
5. Mention the metal involved in nitrogenase enzyme.
6. State the difference between Photosystem-I and II.
7. Name any two anticancer agents and give their structures.

8. Write short notes on metal ion toxicity.

9. Define enzymes.

10. Sketch the Michelis - Menton equation.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the function of Na^+ –K^+ pump with a schematic diagram.

Or

(b) Briefly discuss the biological activity of catalase.

12. (a) With suitable diagrams explain the structure and function of ferredoxins.

Or

(b) Describe about hemerythrin and hemocyanin.

13. (a) Elaborate the mechanism of nitrogen fixation.

Or

(b) Describe the structure and uses of chlorophyll.

14. (a) Account on Diagnosis and treatment using chelation therapy.

Or

(b) Illustrate regarding Vanadium based Diabetes drugs.

15. (a) Classify enzymes and discuss their properties.

Or

(b) Account on Enzyme kinetics.

Shanmuga Industries Arts & Science College T.V.Malai

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the enzymatic activity of carboxypeptidase and carbonic anhydrase.

17. What are cytochromes? How are they classified? Discuss their different classification.

18. Explain the mechanism involved in photosystem I and II.

19. Describe the role played by any three metal ions in biological systems.

20. Illustrate regarding effect of pH and temperature on enzyme reactions.

———————